

[illegible]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

SEP 29 1998

ACTION MEMORANDUM

DATE: 22 SEP 1998

SUBJECT: Confirmation of Verbal Authorization, Ceiling Increase and 12-Month Exemption for Removal Action at the Comell-Dubilier Electronics Site, South Plainfield, Middlesex County, New Jersey

FROM: Eric J. Wilson, On-Scene Coordinator
Removal Action Branch

TO: Jeanne M. Fox
Regional Administrator

THRU: Richard L. Caspe, Director
Emergency and Remedial Response Division

Site ID #: GZ

I. PURPOSE

The purpose of this Action Memorandum is to document verbal authorization, request a ceiling increase and 12-month exemption for the removal action described herein for the Comell-Dubiher Electronics Site (Site), located in South Plainfield, Middlesex County, New Jersey 07080. On August 5, 1997, the Director of the Emergency and Remedial Response Division (ERRD) granted verbal authorization of \$10,000 for the fabrication and installation of signs warning anglers not to eat fish taken from waters of the Bound Brook. On March 26, 1998, the

Director of the ERRD authorized an additional \$ 150,000 to remove and dispose of PCB contaminated dust from the interiors of homes located near the site.

The proposed ceiling increase and exemption from the 12-month statutory limitation will allow removal activities to continue at the site. Proposed actions include cleaning the interiors of eight homes where levels of PCBs in interior dust pose a potential public health concern. The proposed removal actions are expected to cost an additional \$265,000 which will increase the total project ceiling to \$425,000.

Conditions at the Site continue to meet the criteria for a removal action under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as documented in Section 300.415(b)(2) of the National Contingency Plan (NCP). The Site is on the National Priorities List (NPL). There are no nationally significant or precedent-setting issues associated with this removal action.

II SITE CONDITIONS AND BACKGROUND

The Comprehensive Environmental Response, Compensation and Liability Information System ID Number for the Site is NJD981557879.

A. Site Description

I. Removal site evaluation

Comell-Dubilier Electronics operated at the Site from 1936 to 1962 manufacturing electronic parts and components, including capacitors. It is reported that Comell-Dubiher tested transformer oils for an unknown period of time and that PCB contaminated materials and other hazardous substances were deposited directly onto site soils.

EPA conducted sampling at the Site in June 1994, October 1994 and February 1996 for a Site Inspection Prioritization documenting the release of hazardous substances to the environment. Elevated concentrations of volatile organic compounds, semi-volatile organic compounds, PCBs and inorganic constituents were found in site soils. PCBs were also detected in surface waters and sediment of the Bound Brook downstream of the Site at concentrations above background. The Site is a facility as defined within the meaning of Section 101(9) of CERCLA.

In response to a referral from EPA Monitoring and Assessment Branch (see Appendix A), a RSE was conducted by the U.S. Environmental Protection Agency (EPA) Removal Action Branch between March 1996 and January 1997. Contamination of site soils and surface waters and sediments of the Bound Brook was confirmed during the RSE. Based on the findings of the RSE, the Site was determined to be eligible for a CERCLA removal action.

The Site was referred to EPA for removal action consideration by the New Jersey Department of Environmental Protection (NJDEP) on April 2, 1997 (see Appendix B).

As part of a study to assess the impacts of contamination of the Bound Brook on human health and the environment, water, soil, sediment and biota samples were collected from the stream corridor in June and August 1997. PCBs were detected in edible fish throughout the study area at concentrations in excess of what is considered safe to eat by the Food and Drug Administration. Surface soil samples collected from residential properties located near the Site in June 1997 were found to contain low levels of PCBs. No immediate health threats were associated with exposure to PCBs at these levels, however this sampling was not sufficient to adequately characterize contamination at these properties or health concerns for residents. In October 1997, approximately 20 additional soil samples were collected from each of 16 residential properties. In November 1997, indoor dust samples were also collected at twelve of these homes. PCBs were detected in soil at concentrations up to 22 ppm and in indoor dust at concentrations up to 205 ppm.

2. Physical location

The Comell-Dubilier Electronics Site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey. The Site occupies approximately 25 acres in a mixed industrial/commercial/residential area and is bordered by commercial businesses, residences, wetlands and the Bound Brook. Conrail railroad tracks cross the Bound Brook just north of the Site. Other industries are located to the northeast and east of the Site on the opposite side of the Conrail tracks. A site location map is included as Figure 1, in Appendix C.

Residential homes are located on Spicer Avenue and on Hamilton Boulevard within 100 feet of the Site. It is estimated that 540 persons reside within 0.25 miles of the Site. The total population estimated to live within one mile of the Site is 8,700 persons.

The Bound Brook borders the Site on the east. The section of the stream that borders the Site varies in width from ten to twenty feet and in depth from one to three feet. Two miles downstream of the Site the Bound Brook flows into New Market Pond. Drainage from New Market Pond flows approximately 8.5 miles before discharging into the Raritan River. The above referenced water bodies are designated by the State of New Jersey for the maintenance, migration and propagation of the natural and established biota. There are no surface water intakes along this flow path for at least 15 miles. These water bodies are utilized as freshwater fisheries.

3. Site characteristics

During its years of operation at the Site (1936 to 1962), Comell-Dubilier Electronics, Inc. manufactured electronic parts and components, including capacitors. In addition, it is reported that Comell-Dubilier Electronics, Inc. tested transformer oils for an unknown period of time until they vacated the Site. It is alleged that during their operations, Comell-Dubilier Electronics, Inc. dumped PCB-contaminated materials and other hazardous substances directly onto site soils.

The Site is currently known as the Hamilton Industrial Park and is occupied by 15 businesses. The owner of the property is DSC Enterprises of Newark, Inc. Through the years, dozens of

companies have operated at the Site as tenants.

A site stabilization removal action was performed by the owner of Hamilton Industrial Park. This action is described in Section II B of this memorandum.

4. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant

The results of EPA's sampling and analyses indicate elevated concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds, PCBs and inorganic constituents in the site soils. Building interiors at the Site were found to contain elevated levels of PCBs and metals. Off-site investigations conducted by EPA have revealed the presence of PCBs in soils and in house dust at several residences located near the Site. Fish collected from the Bound Brook were found to contain PCBs at concentrations higher than allowed by the Food and Drug Administration.

On June 8, 1994, the EPA collected soil, sediment and surface water samples from the Site. PCBs and lead were detected in soil at concentrations up to 1,100 milligrams per kilogram (mg/kg) and 2,200 mg/kg, respectively. Aroclor-1254, a PCB was detected in soil at concentrations ranging from 6.9 mg/kg to 1,100 mg/kg. Heavy metals were detected in the soil at maximum concentration as follows: arsenic (25.7 mg/kg), cadmium (36.7 mg/kg), chromium (78.6 mg/l), copper (3,020 mg/kg), mercury (2.9 mg/kg), silver (26.7 mg/kg) and zinc (1,380 mg/kg). A sediment sample collected from the stream near the rear of the property revealed the presence of Aroclor-1254 at 550 mg/kg. 1,2-dichloroethene (51 micrograms per kilogram (ug/kg)), trichloroethene (120 ug/kg) and lead (552 mg/kg) were also detected in this same sediment sample. Aroclor-1254 was detected in surface water samples at levels up to 20 micrograms per liter (ug/l). Aroclor-1248, 1,2-dichloroethene and trichloroethene were detected at this same location at 24 ug/l, 100 ug/l and 2 ug/l, respectively. With respect to heavy metals, the maximum values detected in the surface water were: arsenic (15.6 ug/l), cadmium (14.5 ug/l), chromium (25.7 ug/l), copper (89.5 ug/l), lead (180 ug/l), mercury (0.23 ug/l), silver (3.8 ug/l) and zinc (994 ug/l).

On June 27 and 29, 1996, the EPA collected surface and subsurface soil samples from a roadway, a vacant field and a foot/bike path on the Site. The maximum Aroclor-1254 concentration (51,000 mg/kg) detected in the surface soil was collected near the northeast corner of the fenced area where electrical and transformer parts were exposed. Additional surface soil samples collected within the fenced area indicated the presence of Aroclor-1254 at 98 mg/kg, 270 mg/kg and 4,700 mg/kg. The maximum Aroclor-1254 concentration detected on the surface of the site roadway was 340 mg/kg. The average Aroclor-1254 detected on the surface of the site roadway was 87.5 mg/kg. The maximum concentrations of Aroclor-1254 detected just beneath the unpaved stone/gravel layer of the site roadway ranged from 1,000 mg/kg to 22,000 mg/kg. Elevated levels of Aroclor-1254 (90 mg/kg to 3,000 mg/kg) were also detected at the surface, along and in the vicinity, of the foot/bike path at the rear portion of the Site. A sample collected in the floodplain of the stream, down slope from the exposed waste, contained 100 mg/kg of Aroclor-1254.

The average lead concentration detected on the surface of the site roadway was 167.6 mg/kg. The maximum lead and cadmium concentrations on the surface of the site roadway were 340 mg/kg and 19 mg/kg, respectively. The concentration of lead detected beneath the unpaved stone/gravel layer of the site roadway ranged from 1,740 mg/kg to 7,460 mg/kg. Cadmium was also detected at a concentration of 373 mg/kg. Some of the highest levels of lead (1,740 mg/kg - 66,600 mg/kg) and cadmium (43 mg/kg - 271 mg/kg) were noted near the foot/bike path and the northeast corner of the fenced area, within the area where the exposed waste is present.

On July 16, 1996, test pits were excavated in the vacant field and additional soil samples were collected. The test pits revealed stained subsurface soils, dmm carcasses, electrical parts, mica-like chips, wood and debris. Aroclor-1254 and lead were detected at concentrations as high as 1,900 mg/kg and 1,970 mg/kg, respectively, in samples collected from the test pits.

On March 21, 1997, EPA conducted wipe sampling in twelve buildings located at the Site. Aroclor-1254 was found ranging in concentration from 1.5 micrograms per 100 square centimeters ($\mu\text{g}/100\text{cm}^2$) to 500 $\mu\text{g}/100\text{cm}^2$. Weathered Aroclor-1260 was found ranging in concentration from 0.9 $\mu\text{g}/100\text{cm}^2$ to 180 $\mu\text{g}/100\text{cm}^2$. Lead was detected in concentrations ranging from 0.67 $\mu\text{g}/100\text{cm}^2$ to 780 $\mu\text{g}/100\text{cm}^2$. Cadmium was detected in concentrations ranging from 0.09 $\mu\text{g}/100\text{cm}^2$ to 34 $\mu\text{g}/100\text{cm}^2$.

On June 9, 1997, EPA conducted chip and vacuum sampling of two building interiors at the Site. Aroclor-1248 and Aroclor-1254 were detected at concentrations as high as 31,000 mg/kg and 57,000 mg/kg, respectively, in chip samples collected.

In June 1997, EPA initiated a study to determine the impacts of contamination of the Bound Brook on human health and the environment. Soil, sediment, water, and biota (fish, crayfish and small mammals) samples were collected along the Bound Brook adjacent to and downstream of the Site. Samples of edible fish were collected from the Bound Brook, New Market Pond and Spring Lake for use in assessing human health risks. Preliminary sampling indicated that Aroclor-1254 was detected in concentrations up to 13,000 $\mu\text{g}/\text{kg}$ in the sediment and up to 6,200 $\mu\text{g}/\text{kg}$ in the flood plain soils. Copper, zinc, lead and barium was also detected up to 210, 620, 540 and 380 mg/kg, respectively. Aroclor-1248 and Aroclor-1254 were detected in all fillet samples in all species collected including carp, white sucker, pumpkin seed and largemouth bass. Seven pesticides were also detected in the edible fish samples.

In October 1997, EPA collected soil samples at residential properties located near the Site. Aroclor-1254 and Aroclor-1260 were detected in soil samples at concentrations as high as 22 mg/kg and 2.2 mg/kg, respectively.

In November 1997, EPA collected interior dust samples at residential properties located near the Site. Aroclor-1254 and Aroclor-1260 were detected in dust samples at concentrations as high as 120 ppm and 85 ppm, respectively.

The mechanism for past releases to the environment appears to have been the waste disposal practices at the Site. The contamination in the adjoining stream may have occurred due to a

combination of direct discharges, surface water runoff and/or groundwater migration from the Site.

5. NPL status

The Site was added to the NPL on July 27, 1998.

6. Maps, pictures, and other graphics representations

Figures included in Appendix C provide the location of the Site and sampling locations.

B. Other Actions to Date

1. Previous actions

On April 7, 1997, EPA personnel installed temporary fencing and warning signs at each end of a footpath that crosses the site to block pedestrian access to the disposal area. In addition, several large capacitors, which were leaking oil, were collected and over packed.

On March 25, 1997 a unilateral administrative order ("Order") was issued to the owner of the industrial park which required that a removal action be taken to stabilize the site. The scope of work specified in the Order included the paving of facility driveways and parking areas, installing security fence and silt fence to limit migration of contaminants off-site and posting of warning signs. The site stabilization removal action was initiated on July 7, 1997. The paving, installation of security fence and silt fence and posting of warning signs has been completed. A final report documenting this removal action remains to be completed.

In August 1998 past operator Cornell-Dubilier Electronics and current property owner D.S.C. of Newark Inc. entered into an Administrative Consent Order for a removal action which includes removal and dispose of contaminated soil from five residential properties and delineation of contamination at a sixth. Removal activities required under this order were initiated September 3, 1998 and are ongoing.

2. Current actions

On August 7, 1997, EPA initiated a removal action to fabricate and post signs warning anglers not to eat fish taken from the Bound Brook and New Market Pond. PCBs were found in samples collected of edible fish taken from these waters. On the morning of August 8, 1997, EPA and the NJDEP met with elected officials from the affected communities to inform them of these sampling results and planned actions to address public health concerns. Later that day, in a joint press conference, EPA announced the results of the edible fish sampling and NJDEP announced the interim fish consumption advisory for the Bound Brook. Warning signs were

installed at access points to the Bound Brook and New Market Pond on August 8 and 9, 1997. This removal action was completed August 9, 1997 at a cost of \$3,485.

Soil samples collected in June 1997 from the residential community surrounding the Site revealed the presence of PCBs. This sampling was not adequate to determine the extent of PCB contamination or characterize health risks to residents. A phased approach is being employed to determine the extent of PCB contamination in the residential community and characterize health risks. In October and November 1997, soil and indoor dust samples were collected from twelve residential properties located near the Site. Soil samples only were collected from an additional four residential properties. These properties have been designated as Tier 1, and include 15 properties located on Spicer Avenue between Hamilton Boulevard and Behnont Avenue and one property located on Metuchen Road. Figure 2 in Appendix C shows the location of residential properties sampled. PCBs were detected at Tier 1 properties at concentrations up to 22 mg/kg in surface soils and 205 mg/kg in indoor dust. The Agency for Toxic Substances and Disease Registry (ATSDR) has reviewed this data and concluded that the actual or potential health concerns exist at the homes sampled.

In response to finding PCBs at levels of potential health concern at Tier 1 homes, soil and indoor dust samples were collected to characterize health risks from 19 additional residential properties bordering Tier 1 in April 1998. These homes have been designated as Tier 2 and are located on the northeast side of Delmore Avenue between Hamilton Boulevard and Belmont Avenue and on Hamilton Boulevard between Lakview Avenue and Amboy Avenue. The results of this sampling are being evaluated by ATSDR and EPA risk assessors.

Screening soil samples were collected at 100 foot interval in the area surrounding the Site and Tier 2 in May 1998. Data from this sampling event will be used to determine if additional sampling is necessary to characterize health risks in this area.

On March 29, 1998, EPA initiated a removal action to clean the interiors of Tier 1 homes where PCBs were found in indoor house dust at levels of potential public health concern. The cleaning was initiated on April 4, 1998 and completed April 26, 1998. Seven homes were cleaned as part of this action. The cost to date for this action is \$139,410. Post-cleaning indoor dust samples were collected to determine the effectiveness of the cleaning. The results of analysis of these samples will be used to determine if additional actions are necessary at these homes.

C. State and Local Authorities' Role

1. State and local actions to date

There have been no State or local remedial actions taken at the Site. The New Jersey Department of Health and Senior Services (NJDHSS) is providing health consultations to the EPA through ATSDR. Based on the results of EPA's sampling, the NJDEP issued a fish consumption advisory for the Bound Brook and its tributaries including Newmarket Pond and Spring Lake.

2. Potential for continued State/local response

It is anticipated that the NJDHSS will continue to provide technical assistance to the EPA concerning health issues at the Site. At this time, it is not known whether there will be any other future State or local actions taken at the Site.

III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES

The following factors described in 40 CFR Part 300.415(b)(2) of the NCP were applied in determining the appropriateness of a removal action at the Site:

- (i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, or pollutants, or contaminants; and
- (ii) The availability of other appropriate federal or State response mechanisms to respond to the release.

A. Threats to Public Health or Welfare

Samples of edible fish collected from the Bound Brook and New Market Pond by EPA in June 1997 were found to contain PCBs at concentrations ranging from 0.25 to 36 mg/kg. Based on a review of the data from this sampling event, ATSDR concluded that the PCBs are present in the fish collected at concentrations that exceed the Food and Drug Administration tolerance level of 2 ppm and are a public health concern. The Bound Brook and New Market Pond are utilized as fresh water fisheries. Individuals that consume fish that contain elevated levels of PCBs can be exposed at levels of public health concern. In humans, long term exposure to PCBs can affect the skin and liver and many impact the reproductive, neurologic and immunosuppressive systems; and carcinogenic effects have been observed in animal studies. A Health Consultation prepared by ATSDR regarding consumption of fish from the Bound Brook is included in Appendix D. No other local, State or federal response mechanism was available to take timely action to post these water bodies with signs warning anglers not to eat the fish.

PCBs were detected in soil and in dust at several of the Tier 1 homes sampled in October and November 1997. On May 28, 1998, ATSDR issued a Public Health Consultation for the Site which addresses health concerns for residents of homes sampled by EPA in October and November 1998 from exposure to PCBs in indoor dust and surface soils. Based on a review of the data from these sampling events, ATSDR concluded that the levels of PCBs detected in indoor dust and surface soils may pose a health concern or a potential health concern to residents and recommended that actions be taken to reduce or stop potential exposure to indoor dust and surface soil contaminated with PCBs. ATSDR's Health Consultation for the residential properties sampled in October and November 1997 is included in Appendix D.

A screening level risk assessment was prepared by EPA Program Support Branch based on the data collected by EPA from residential properties located near the Site in October and

November 1997. This document is included in Appendix E. Cancer and non-cancer health risks were estimated for each property sampled for exposure to PCBs in surface soil and indoor house dust. The calculated cancer risks exceed 1×10^{-4} at two properties, calculated non-cancer risks exceed a Hazard Index of one at ten properties.

The results of analysis of indoor dust samples collected by EPA in April 1998 from Tier 1 (post-cleaning) and Tier 2 homes are being evaluated by ATSDR and EPA risk assessors. Based on a preliminary review of this data, ATSDR has indicated that actions are required to address health concerns from exposure to PCBs in interior house dust at eight Tier 2 residences. EPA's risk assessor concurred with ATSDR's conclusions regarding the need for corrective action at these eight homes.

B. Threats to the Environment

EPA's investigation of ecological impacts of contamination of the Bound Brook documented many contaminants at relatively high levels adjacent to and/or immediately down gradient of the Site, indicating that the Site is the primary source of many of the contaminants of concern within the section of the Bound Brook corridor investigated. An ecological risk assessment conducted, based on the results of this investigation, found that the structure and function of the Bound Brook and its stream corridor, adjacent to and downstream of the Site, is at risk from chemical contamination. Benthic organisms, fish, birds, omnivorous mammals and carnivorous mammals utilizing the stream and stream corridor were determined to be at risk.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

A. Consistency Exemption

1. Continued response actions are otherwise appropriate and consistent with the remedial action to be taken.

Section 104(c) of CERCLA, as amended, limits removal actions to 12 months unless an exemption is justified by an emergency or a determination of consistency with the remedial action. Exposure to PCBs in dust within the home may pose a health concern or a potential health concern to residents. The removal of PCBs from the interiors of the affected homes is an appropriate response action and is necessary to protect the health and welfare of residents. Future remedial actions would need to address health concerns associated with interior PCB contamination.

VI. PROPOSED ACTIONS AND ESTIMATED COST

A. Proposed Actions

1. Proposed action description

Actions taken to educate the public about the health concerns associated with consumption of fish taken from the waters of Bound Brook and New Market Pond are discussed in Section II B 2 of this memorandum.

ATSDR determined that the level of PCBs detected in indoor house dust in nine of the homes samples in November 1997 posed a health concern or a potential health concern for residents. Interior house cleaning was offered to the residents of these homes. Residents of seven of these homes accepted the cleaning offered, residents of two of the homes sampled refused cleaning.

The scope of work for this removal action includes the cleaning of homes where health concerns or potential health concerns exist and the temporary relocation of residents during the cleaning. The cleaning procedures employed included: wiping down all horizontal exposed surfaces; vacuuming floors, drapes upholstery, molding and window casings using HEPA vacuums; washing all tile, linoleum and wood floors; steam cleaning carpets and area mgs; cleaning heating and cooling ducts; and cleaning or replacing all filters on air handling equipment. The cleaning was conducted in April 1998.

Post-cleaning indoor dust samples were collected at the seven homes cleaned as part of this removal action to determine the effectiveness of the cleaning. A second set of indoor dust samples were collected from the two homes that refused cleaning.

Based on a preliminary review of the results of samples collected in April 1998, ATSDR concluded that the level of PCBs found in dust in eight Tier 2 homes poses a potential public health concern. Additional funds are requested at this time to clean the interiors of eight homes or partially clean the interiors of more than eight homes as necessary to address potential public health concerns associated with exposure to PCBs in residential house dust.

2. Contribution to remedial performance

Removal action at the Site is consistent with the requirement of Section 104(a)(2) of CERCLA, which states, "any removal action undertaken...should...to the extent practicable, contribute to the efficient performance of any long-term remedial action with respect to the release or the threatened release concerned." These actions will mitigate threats posed to human health which would otherwise have to be addressed through remedial action.

3. Description of alternative technologies

No alternative technologies were considered for these removal actions.

4. EE/CA

Due to the time critical nature of these removal actions, an EE/CA was not prepared.

5. **Applicable or Relevant and Appropriate Requirements (ARARS)**

ARARS that are within the scope of these actions were met to the extent practicable. Federal ARARS determined to be applicable include the Occupational Safety and Health Act, the Resource Conservation and Recovery Act and the Toxic Substances Control Act.

6. **Project schedule**

Removal activities will continue upon approval of the funding requested. Where possible, interior cleaning will be conducted after the removal of PCB contaminated soil is completed.

B. **Estimated Costs**

The estimated costs for the completion of this project are summarized below.

	<u>Current Ceiling</u>	<u>Cost to Date</u>	<u>Proposed Ceiling</u>
<u>EXTRAMURAL COSTS:</u>			
<u>Regional Allowance Costs:</u>			
ERRS Cleanup contractor: (including contingency)	\$140,000	\$134,445	\$332,000
<u>Other Extramural Costs:</u>			
START	<u>10,000</u>	<u>4,965</u>	<u>22,000</u>
Subtotal Extramural Costs	150,000	NA	354,000
Extramural Cost Contingency	<u>-0</u>	<u>NA</u>	<u>41,000</u>
TOTAL EXTRAMURAL COSTS	\$150,000	\$139,410	\$395,000
<u>INTRAMURAL COSTS:</u>			
Intramural Direct Costs	3,300	NA	10,000
Intramural Indirect Costs	<u>6,700</u>	<u>NA</u>	<u>20,000</u>
TOTAL INTRAMURAL COSTS	<u>10,000</u>	<u>7,600</u>	<u>30,000</u>
TOTAL PROJECT CEILING	\$160,000	\$147,010	\$425,000

VII. **EXPECTED CHANGE IN THE SITUATION SHOULD NO ACTION BE TAKEN OR ACTION DELAYED**

Not applicable.

VIII. OUTSTANDING POLICY ISSUES

No known outstanding policy issues are associated with this removal action.

IX. ENFORCEMENT

On February 4, 1997, Notice Letters were issued to two potentially responsible parties (PRPs) for the Cornell-Dubilier Electronics Site.

X. RECOMMENDATION

This decision document represents the selected removal action for the Cornell-Dubilier Electronics Site located in South Plainfield, Middlesex County, New Jersey developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action and the CERCLA Section 104(c) consistency exemption from the 12-month limitation. The total project ceiling, if approved, will be \$425,000. Of this, an estimated \$332,000 is for mitigation contracting.

Please approve the ceiling increase and 12-month exemption for the Cornell-Dubilier Electronics Site as per current Delegation of Authority, by signing below.

APPROVAL: /s/ William J. Muszynski
Jeanne M. Fox
Regional Administrator

DATE: SEP 29 1998

DISAPPROVAL: _____
Jeanne M. Fox
Regional Administrator

DATE: _____

cc: (after approval)
J. Fox, RA
W. Muszynski, DRA
R. Caspe, ERRD-D
W. McCabe, ERRD-DD
R. Salkie, ERRD-RAB
J. Rotola, ERRD-RAB
E. Dominach, ERRD-RAB
G. Zachos, OMBUDSMAN
C. Petersen, ERRD-NJRP
B. Bellow, EPD

D. Karlen, ORC-NJSUP
S. Murphy, OPM-FIN
T. Johnson, 5202G
R. Van Fossen, NJDEP
M. Peterson, NJDEP
J. Smolenski, NJDEP
A. Raddant, DOI
G. Wheaton, NOAA
O. Douglas, START

APPENDIX A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

DATE: JUL 21 1995

RECEIVED
John Witkow

SUBJECT: Potential Action at Cornell-Dubilier Site, S. Plainfield, NJ

FROM: Richard Spear, Chief
Surveillance and Monitoring BranchREMOVAL AND EMERGENCY
PREPAREDNESS PROGRAMSTO: Richard Salkie, Associate Director
Removal and Emergency Preparedness Program

It has come to our attention, as a result of a site inspection performed by Malcolm Pirnie Inc., that a potentially hazardous environmental condition may exist at the former Cornell-Dubilier Site in downtown South Plainfield, NJ. High levels of PCB Arochlor-1254 are found in soils at the site (up to 1,100 ppm) and in the nearby unnamed tributary to Bound Brook (up to 550 ppm of Arochlor-1254). Elevated levels of cadmium (36.7 ppm), chromium (78.6 ppm), lead (2,200 ppm), mercury (2.9 ppm) and silver (26.7 ppm) are also found in the soils at the site.

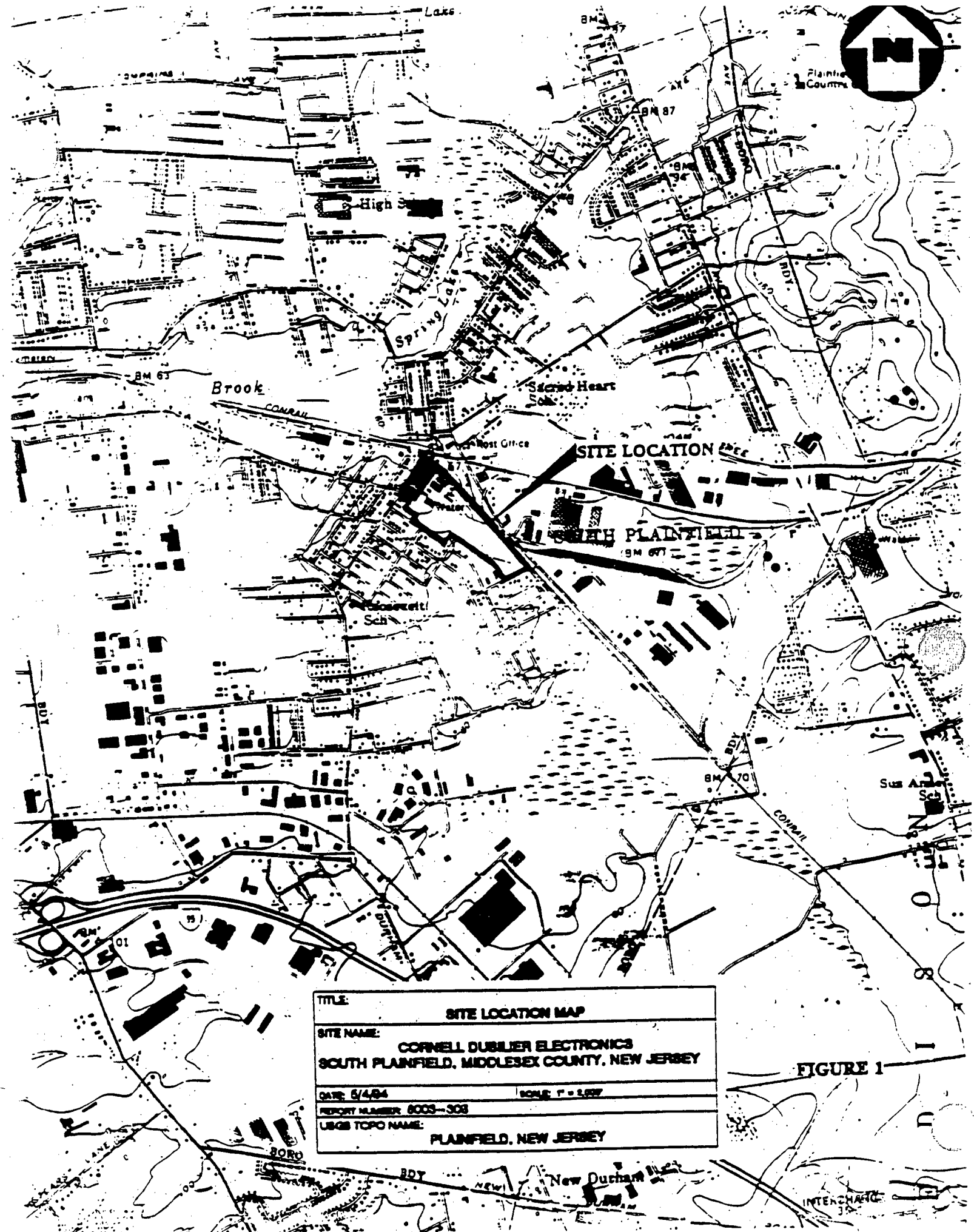
The site is not fenced and there are several homes within 200 feet of the site boundary. It is estimated that between 10 and 100 workers are employed at the Hamilton Industrial Park (the site's current name). Sampling results indicate that more than 0.1 miles of wetlands have been actually contaminated with Level II concentrations of PCBs.

Please review this information to determine if any stabilization or removal actions are necessary. A copy of the site screening letter prepared as part of the Hazardous Ranking System Package is attached to provide more detailed information.

Attachment

CC: D. Santella (2ERRD-PSB)

ATTACHMENT 1
CORNELL DUBILIER ELECTRONICS, INC.
FIGURES AND TABLES



TITLE	
SITE LOCATION MAP	
SITE NAME:	
CORNELL DUBILIER ELECTRONICS	
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY	
DATE: 5/4/84	SCALE: 1" = 2,000'
REPORT NUMBER: 6003-308	
USGS TOPO NAME:	
PLAINFIELD, NEW JERSEY	

FIGURE 1

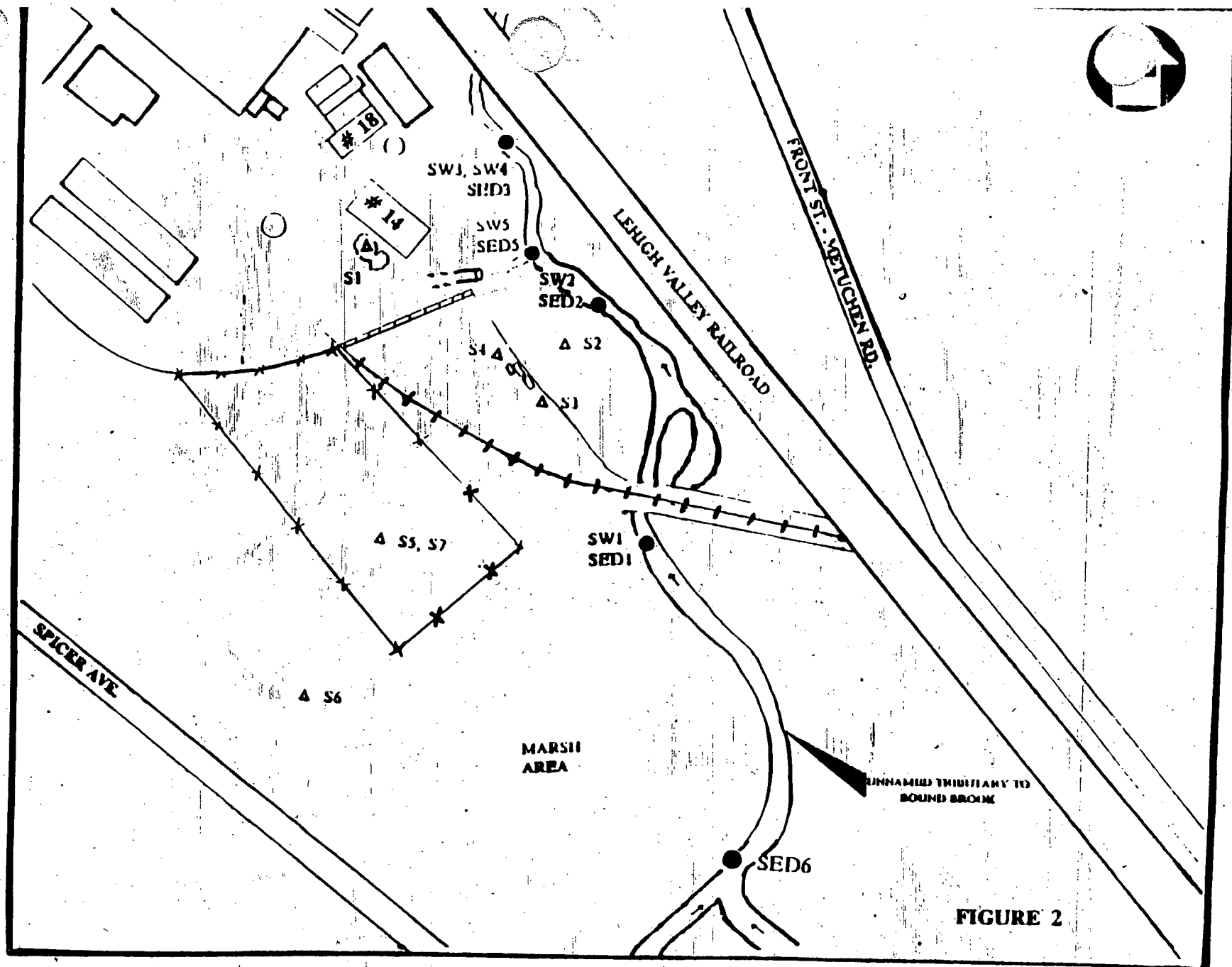
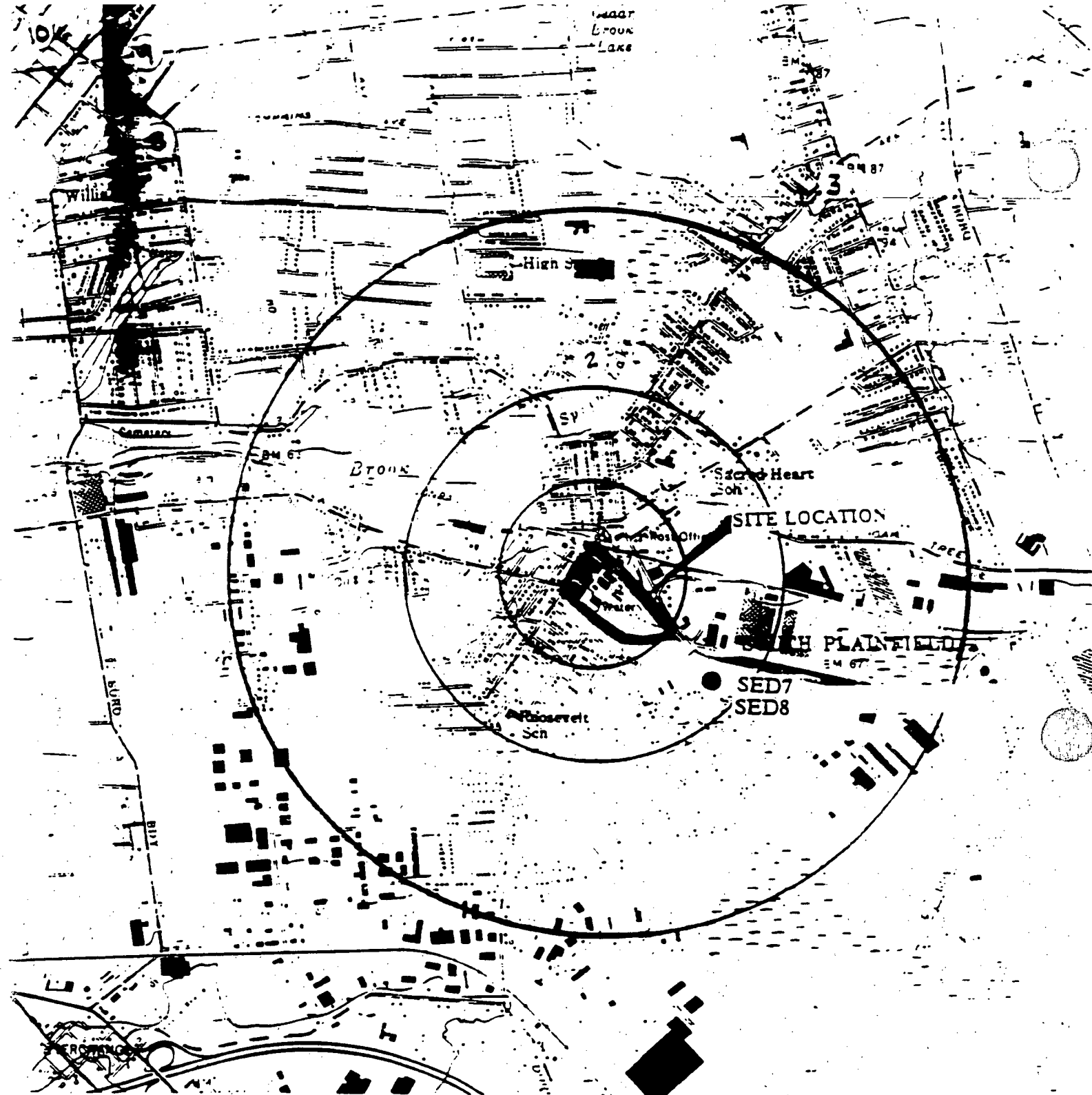


FIGURE 2

CORNELL DUBILIER ELECTRONICS
 SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY
 SAMPLE LOCATION MAP
 NOT TO SCALE



CORNELL DUBILIER ELECTRONICS
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY
OFF-SITE SAMPLE LOCATION MAP
SCALE: 1" = 2,000 FT.

FIGURE 3

TABLE 1

Analytical Data⁽¹⁾

Comell Dubilier Site Inspection Prioritization Sampling Event - June 8, 1994

Hazardous Substance	Media	Background Sample Location	Background Sample Concentration $\mu\text{g/kg}^{(2)}$	Contaminated Sample Location	Contaminated Sample Concentration $\mu\text{g/kg}$
arsenic	SOIL	S8	3,200	S1	16,700
				S2	15,200
				S3	25,700
				S4	12,900
cadmium	SOIL	S8	ND ⁽³⁾	S4	4,700
				S5	33,200
				S7	36,700
chromium	SOIL	S8	11,900	S4	78,600
lead	SOIL	S8	43,200	S1	178,000
				S2	348,000
				S3	198,000
				S4	419,000
				S5	2,200,000
				S7	1,990,000
mercury	SOIL	S8	ND	S1	2,400
				S2	980
				S3	240
				S4	2,900
				S5	470
				S7	760
PCBs	SOIL	S8	3,200	S1	68,000
				S2	110,000
				S5	1,100,000
				S7	1,100,000
silver	SOIL	S8	1,100 J ⁽⁴⁾	S2	6,800
				S5	28,700
				S7	22,900
PCBs (Aroclor-1254)	SEDIMENT	SED8 ⁽⁵⁾	520 E	SED1	550,000
		SED7 ⁽⁵⁾	250 E	SED2	3,700
		SED8 ⁽⁵⁾	310	SED3	4,500
				SED5	51,000

NOTES

- 1 All data has been analyzed and validated utilizing USEPA Contract Laboratory Program Protocols.
- 2 $\mu\text{g/kg}$ = micrograms per kilogram
- 3 ND = Not Detected
- 4 J = estimated value, compound present below CRQL but above IDL
- 5 Background sediment samples were collected during a separate sampling event on October 13, 1994.

ATTACHMENT 2
CORNELL DUBILIER ELECTRONICS, INC.
PROJECT NOTES

To:File	Date:June 6, 1995
From:Andrew Clibanoff	Project #:8003-454
Subject:Waste Source Calculations	Site Name:Comell Dubilier Electronics, Inc.

One waste source has been identified at the Comell Dubilier Electronics, Inc (CDEI) site.

Waste Source 1 (Contaminated Soil): CCEI tested transformer oils at the site for an unknown period of time until the company vacated the site in 1961. It was alleged during CDEI's period of operation that the company dumped transformer oil contaminated with polychlorinated biphenyls (PCBs) directly onto site soils. Former employees have reportedly claimed that transformers were buried behind the facility during the same time period. Surficial soil samples were collected from six locations during a June 1994 USEPA sampling event. Analyses of the soil samples detected the following CERCLA hazardous substances at concentrations greater than three times background levels: arsenic (25.7 mg/kg), cadmium (36.7 mg/kg), chromium (78.6 mg/kg), lead (2,200 mg/kg), mercury (2.9 mg/kg), PCBs (Aroclor-1254 @ 1,100,000 µg/kg), and silver (26.7 mg/kg). An area of > 0 square feet is assigned to this waste source.

To:File	Date:June 20, 1995
From:Andrew Cilbancff	Project #:8003-454
Subj:Groundwater Apportionment	Site Name:Comell Dubilier Electronics

There are two public water suppliers that draw water from wells located within four miles of the Comell Dubilier Electronics Site: Middlesex Water Company and Elizabethtown Water Company.

Middlesex Water Company

Middlesex Water Company (MWC) utilizes 32 wells in conjunction with a surface water intake and water purchased from the Elizabethtown Water Company to supply potable water to approximately 52,000 service connections in the communities of South Plainfield, Metuchen, Carteret, Woodbridge, Edison and portions of Clark. A total population of 140,920 (52,000 service connections x 2.71 people/household in Middlesex County) receives its drinking water from Middlesex Water Company. Water is also provided via bulk transmission lines to the communities of Edison Township, Highland Park, Old Bridge MUA, Marlboro Township MUA and Sayreville. Although the system is interconnected in such a way that it is possible for water from any water supply unit to reach the bulk transmission lines, practically all of the water shipped in the bulk transmission lines originates from the surface water intake. The surface water intake accounts for 63.2% of the total system flow for MWC, wells account for 31.4%, and 5.4% is purchased from the Elizabethtown Water Company.

Apportionment Calculation

1 Wellfield Name	2 No. of wells	3 % of total system flow (1994)	4 <u>Population</u> Wellfield (Column 3 * 140,920)
Park Avenue	15	18.5	26,070
Spring Lake	4	2.9	4,087
Maple Avenue	2	1.8	2,537
Sprague Ave. Nos. 1 & 2	2	2.8	3,946
Tingley Lane North & South	<u>9</u>	<u>5.4</u>	<u>7,610</u>
	32	31.4%	44,250

The Sprague Avenue wells and six of the fifteen Park Avenue wells are drawing water from the stratified drift. All of the other wells owned by Middlesex Water Company tap the Brunswick Aquifer. The Spring Lake Wellfield is in the 0.5 to 1 mile ring. The Park Avenue, Maple Avenue, and Sprague Avenue Wellfields are located in the 1-2 mile ring. The Tingley Lane Wellfield is located in the 2-3 mile ring.

Stratified Drift - - - -

Population served in 1-2 mile ring = (Park and Sprague Ave. Wells) = (10,428 + 3,946) = 14,374

Brunswick Aquifer

Population served in 1/4-1 mile ring = Spring Lake Wells = 4,087

Population served in 1-2 mile ring = (Park and Maple Ave. Wells) = (15,642 + 2,537) = 18,179

Population served in 2-3 mile ring = Tingley Lane Wellfield = 7,610

To:File	Date:June 6, 1995
From:Andrew Cilbanoff	Project #:8003-454
Subject:Groundwater Apportionment	Site Name:Cornell Dubilier Electronics

Elizabethtown Water Company (EWC)

Many communities within four miles of the site obtain their potable water from the Elizabethtown Water Company (EWC). EWC supplies drinking water to the communities of Somerville, Bridgewater Township, Warren Township, Green Brook, Dunellen, Middlesex Borough, Bound Brook, South Bound Brook, Piscataway and portions of Franklin Township.

The EWC distribution system currently blends water from five surface water intakes with water from 76 operating wells to provide water to 183,853 service connections. A total population of 498,241 (183,853 service connections x 2.71 people/household in Middlesex County) receives its drinking water from Elizabethtown Water Company. Surface water makes up roughly 85% of the total system flow with one of the intakes on the Raritan River providing more than 40% of the total system flow. The distribution system is completely interconnected and all of the wells within four miles of the site tap the Brunswick Formation. The population served by groundwater within four miles of the site was estimated based on pumpage capacity. There are 21 operating EWC wells within four miles of the Cornell Dubilier Site. Two EWC operating wells (serving 2,571 people) are located within the 1-2 mile ring, four wells (serving 3,196 people) are located in the 2-3 mile ring and 15 wells (serving 14,063 people) are located within the 3-4 mile ring.

Summary of Apportionment Calculations

Stratified Orifi			
Ring (mi)	Middlesex Water Co.	Elizabethtown Water Company	Total Population
0 - 0.25	0	0	0
0.25 - 0.5	0	0	0
0.5 - 1	0	0	0
1 - 2	14,374	0	14,374
2 - 3	0	0	0
3 - 4	0	0	0
Total:	14,374	0	14,374

Brunswick Aquifer			
Ring (mi)	Middlesex Water Co.	Elizabethtown Water Company	Total Population
0 - 0.25	0	0	0
0.25 - 0.5	0	0	0
0.5 - 1	4,087	0	4,087
1 - 2	18,179	2,571	20,750
2 - 3	7,610	3,196	10,806
3 - 4	0	14,063	14,063
Total:	29,876	19,830	49,706

Elizabethtown Water Company
Active Well List - June 15, 1995

Municipality	Facility Name	Well Depth (feet)	Formation	Pump Cap. (gpm)	% Total System Flow	Population Per W
1 Bound Brook	Mountain Sta. #1	366'	Brunswick	375	0.21%	1,042
2 Bound Brook	Mountain Sta. #1	403'	Brunswick	350	0.20%	973
3 Bound Brook	Mountain Sta. #3	352'	Brunswick	—	0.00%	0
4 Bridgewater	Papen Road	225'	Basalt	310	0.17%	862
5 Bridgewater	Wells Road #3	230'	Basalt	45	0.03%	125
6 Bridgewater	Wells Road #2	230'	Basalt	40	0.02%	111
7 Cranbury	Cranbury Well #1A	260'	Farrington	300	0.17%	834
8 Cranbury	Cranbury Well #2	110'	Old Bridge	—	0.00%	0
9 Cranbury	Cranbury Well #3	298'	Farrington	400	0.22%	1,112
10 GREEN BROOK	GREEN BROOK #1	451'	BRUNSWICK	310	0.17%	862
11 GREEN BROOK	GREEN BROOK #2	376'	BRUNSWICK	650	0.36%	1,807
12 GREEN BROOK	GREEN BROOK #3	550'	BRUNSWICK	60	0.03%	167
13 GREEN BROOK	GREEN BROOK #4	400'	BRUNSWICK	350	0.20%	973
14 GREEN BROOK	GREEN BROOK #8	454'	BRUNSWICK	315	0.18%	875
15 GREEN BROOK	GREEN BROOK #6	373'	BRUNSWICK	280	0.16%	778
18 GREEN BROOK	GREEN BROOK #7	546'	BRUNSWICK	180	0.10%	500
17 GREEN BROOK	GREEN BROOK #8	445'	BRUNSWICK	500	0.28%	1,390
18 GREEN BROOK	GREEN BROOK #9	507'	BRUNSWICK	500	0.28%	1,390
19 GREEN BROOK	GREEN BROOK #11	433'	BRUNSWICK	340	0.19%	945
20 GREEN BROOK	ROCK AVENUE	350'	BRUNSWICK	330	0.18%	917
21 Kenilworth	Quinton Avenue	502'	Brunswick	185	0.10%	514
22 Montgomery	Montgomery #1	305'	Stockton	400	0.22%	1,112
23 Montgomery	Montgomery #2	335'	Stockton	300	0.17%	834
24 Mountainside	Bristol Road	315'	Brunswick	330	0.18%	917
25 Mountainside	Charles Street #1	454'	Brunswick	300	0.17%	834
26 Mountainside	Charles Street #2	572'	Brunswick	150	0.08%	417
27 N. PLAINFIELD	BOARD OF EDUCATION	311'	BRUNSWICK	400	0.22%	1,112
28 PISCATAWAY	ROCK AVENUE	350'	BRUNSWICK	150	0.08%	417
29 PLAINFIELD	FIFTH STREET	350'	BRUNSWICK	300	0.17%	834
30 Plainfield	George Street	350'	Brunswick	125	0.07%	347
31 PLAINFIELD	NETHERWOOD #1	350'	BRUNSWICK	220	0.12%	611
32 PLAINFIELD	NETHERWOOD #2	500'	BRUNSWICK	225	0.13%	625
33 PLAINFIELD	NETHERWOOD #3	350'	BRUNSWICK	600	0.33%	1,668
34 Plainfield	Netherwood #4	400'	Brunswick	300	0.17%	834
35 Plainfield	Netherwood #5	350'	Brunswick	300	0.17%	834
36 Plainfield	Netherwood #8	300'	Brunswick	325	0.18%	903
37 Plainfield	Netherwood #7	350'	Brunswick	350	0.20%	973
38 Plainfield	Netherwood #8	304'	Brunswick	300	0.17%	834
39 Plainfield	Netherwood #9	350'	Brunswick	300	0.17%	834
40 Plainfield	Netherwood #10	350'	Brunswick	300	0.17%	834
41 Plainfield	Netherwood #11	350'	Brunswick	250	0.14%	695
42 Plainfield	Netherwood #12	352'	Brunswick	400	0.22%	1,112
43 PLAINFIELD	PROSPECT AVENUE	350'	BRUNSWICK	300	0.17%	834
44 Plainsboro	Plainsboro #1	120'	Raritan	350	0.20%	973
45 Plainsboro	Plainsboro #2	208'	Raritan	295	0.16%	820
46 Princeton	Harrison Street #1	503'	Stockton	100	0.06%	278
47 Princeton	Harrison Street #4	302'	Stockton	150	0.08%	417

**Elizabethtown Water Company
Active Well List - June 15, 1995**

Municipality	Facility Name	Well Depth. (feet)	Fonnation	Pump Cap. (gpm)	% Total System Flow	Population Per Well
48 Princeton	Hamison Street #5	300'	Stockton	240	0.13%	667
49 Princeton	Hamison Street #8	335'	Stockton	390	0.22%	1,084
50 Princeton	Hamison Street #7	300'	Stockton	65	0.04%	181
51 Princeton	Stony Brook #2	300'	Stockton	300	0.17%	834
52 Princeton	Stony Brook #3	353'	Stockton	400	0.22%	1,112
53 Princeton	Stony Brook #4	382'	Stockton	300	0.17%	834
54 Princeton	Stony Brook #8	304'	Stockton	450	0.25%	1,251
55 Princeton	Stony Brook #7A	350'	Stockton	600	0.33%	1,668
56 Princeton	Stony Brook #8	302'	Stockton	600	0.33%	1,668
57 Raritan Township	Maple Glen	355'	Bmnswick	250	0.14%	895
58 SCOTCH PLAINS	ABERDEEN ROAD	350'	BRUNSWICK	200	0.11%	556
59 Scotch Plains	Glenside Avenue	540'	Bmnswick	200	0.11%	556
60 Scotch Plains	Jemsalem Road #1	650'	Bmnswick	275	0.15%	764
61 Scotch Plains	Jemsalem Road #2	665'	Brunswick	350	0.20%	973
62 Scotch Plains	Jemsalem Road #3	708'	Bmnswick	150	0.08%	417
63 SOUTH PLAINFIELD	CLINTON AVENUE	350'	BRUNSWICK	475	0.26%	1,320
64 SOUTH PLAINFIELD	EIGHTH STREET	350'	BRUNSWICK	450	0.25%	1,251
65 Tewksbury	Pottersville	300'	Pre-Cambrian	100	0.06%	278
66 Union	Hummocks #4A	117.5'	Bmnswick	70	0.04%	195
67 Union	Hummocks #5A	128'	Bmnswick	100	0.06%	278
68 Union	Hummocks #6AR	130'	Bmnswick	300	0.17%	834
69 Union	Hummocks #7A	233'	Bmnswick	85	0.05%	238
70 Union	Hummocks #8A	114'	Bmnswick	200	0.11%	556
71 Union	Hummocks #17	99.5'	Brunswick	250	0.14%	695
72 Union	Hummocks #H2	110'	Bmnswick	150	0.08%	417
73 Union	Ranney Well Pump #1	99'	Bmnswick	2,500	1.39%	6,948
74 Union	Ranney Well Pump #2	99'	Bmnswick	2,500	1.39%	6,948
75 West Windsor	Jefferson Park #1	121'	Raritan	600	0.33%	1,668
76 West Windsor	Jefferson Park #2	126'	Raritan	600	0.33%	1,668

Total Pumpage Capacity: 26,490 14.78% 73,624

Total Intake Capacity: 152,778

Total System Capacity: 179,268

Total Service Connections (Elizabethtown Water Company): 183,853

Population/Household (Middlesex County): 2.71

Total Population Served: 498,242

Notes:

1. Wells within four miles of the Cornell Dubilier Electronics, Inc. Site shown in bold and caps.
2. % Total System Flow = (Pumpage Capacity / Total System Capacity) x 100.
3. Population Per Well = (% Total System Flow x Total Population Served) / 100

**Comell Dubilier Electronics, Inc.
 Elizabethtown Water Company Wells
 Located Within Four Miles of the Site**

Facility Name	Fonnation	Distance Category (miles)	Pumpage Capacity (gpm)	% Total System Flow	Population Per Well
CLINTON AVENUE	BRUNSWICK	1 - 2	475	0.26%	1,320
EIGHTH STREET	BRUNSWICK	1 - 2	450	0.25%	1,251
BOARD OF EDUCATION	BRUNSWICK	2 - 3	400	0.22%	1,112
ROCK AVENUE	BRUNSWICK	2 - 3	150	0.08%	417
FIFTH STREET	BRUNSWICK	2 - 3	300	0.17%	834
PROSPECT AVENUE	BRUNSWICK	2 - 3	300	0.17%	834
GREEN BROOK #1	BRUNSWICK	3 - 4	310	0.17%	862
GREEN BROOK #2	BRUNSWICK	3 - 4	650	0.36%	1,807
GREEN BROOK #3	BRUNSWICK	3 - 4	60	0.03%	167
GREEN BROOK #4	BRUNSWICK	3 - 4	350	0.20%	973
GREEN BROOK #5	BRUNSWICK	3 - 4	315	0.18%	875
GREEN BROOK #6	BRUNSWICK	3 - 4	280	0.16%	778
GREEN BROOK #7	BRUNSWICK	3 - 4	180	0.10%	500
GREEN BROOK #8	BRUNSWICK	3 - 4	500	0.28%	1,390
GREEN BROOK #9	BRUNSWICK	3 - 4	500	0.28%	1,390
GREEN BROOK #11	BRUNSWICK	3 - 4	340	0.19%	945
ROCK AVENUE	BRUNSWICK	3 - 4	330	0.18%	917
NETHERWOOD #1	BRUNSWICK	3 - 4	220	0.12%	611
NETHERWOOD #2	BRUNSWICK	3 - 4	225	0.13%	625
NETHERWOOD #3	BRUNSWICK	3 - 4	600	0.33%	1,668
ABERDEEN ROAD	BRUNSWICK	3 - 4	200	0.11%	556

Total Population (1 - 2 Mile Ring): 2,571
Total Population (2 - 3 Mile Ring): 3,196
Total Population (3 - 4 Mile Ring): 14,063

APPENDIX B



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

APR 02 1997

Richard L. Caspe, Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II
290 Broadway
New York, New York 10007-1866

Re: Removal Request - Cornell Dubilier Electronics Inc.
333 Mamilcon Boulevard
South Plainfield, Middlesex County

Dear Director Caspe:

The New Jersey Department of Environmental Protection (Department) hereby submits the Cornell Dubilier Electronics Inc. site ("site") for CERCLA removal action consideration. The following information details the case history and supports the removal request.

The site is located at 333 Hamilton Boulevard in South Plainfield Borough, Middlesex County. It is approximately 25 acres in size and is bordered to the north, west and south by commercial and residential properties. The area to the east of the site is zoned and utilized entirely for industrial purposes. The site is designated as Block 256, Lot 1 on the municipal tax map of the Borough of South Plainfield. Cornell Dubilier Electronics Inc. (CDE) owned the site from 1956 to 1961. The current property owner is DSC of Newark Enterprises Inc.

CDE produced capacitors and tested transformer oils at the site until 1961 when the company vacated the site. Currently, the site is occupied by the Hamilton Industrial Park which consists of approximately 15 small industries.

During the years CDE operated from the site it has been alleged that the company dumped transformer oil contaminated with polychlorinated biphenyls (PCBs) directly onto soil at the site. Also, information obtained by the Department's Responsible Party Investigation Unit indicates that waste generated by CDE operations (i.e. spent filter material from the PCB recovery system, residue from trichloroethylene recycling units, capacitors etc.) were landfilled at the site.

On September 11, 1986 Department personnel conducted a Site Inspection and collected soil, surface water and sediment samples. Several metals, volatile organic compounds (VOC) and PCB contamination was detected in the soil. PCB contamination was also detected in sediment samples.

On February 13, 1992 the Department issued a Directive to CDE to 1) determine if the discharges of hazardous substances has contaminated the ground water at the site, 2) if the ground water has been contaminated, determine if the contamination is leaving the site, 3) remediate all sources of the contamination and 4) if the contamination has migrated off site, to institute measures to prevent contamination from migrating any further off site.

On June 19, 1992 the case was transferred to the Division of Publicly Funded Site Remediation (DPFSR) due to non-compliance by CDE to the directive. The South Plainfield area has been identified as a regional ground water contamination area. DPFSR determined that water lines and point of entry treatment systems (POETS) have been or were being installed under the Spill Fund Program in the area near CDE and thereby no additional actions were taken.

On June 8, 1994, as part of a Site Inspection Prioritization, EPA collected soil, surface water and sediment samples. Sampling results revealed elevated concentrations of semivolatile organic compounds, PCBs, and inorganic constituents in the site soil. Sediment samples were inconclusive due to conflicting analysis results.

On February 26, 1996 EPA resampled the site. PCB contamination was documented in both soil and sediment samples.

In addition, the current property owner, DSC of Nevark Enterprises Inc., has submitted several reports to the Department for review under the ISRA program during the period from 1994 to 1996. Department review of the submissions revealed that the reports did not disclose all of the environmental issues, including PCB contamination, associated with the site.

EPA has requested the Department's concurrence to propose the site for NPL listing. In addition, the EPA Removal Action Branch has conducted an assessment to evaluate the threat posed by PCB contaminated soil at the site. The Removal Action Branch is currently working with responsible parties to initiate remedial activities which will stabilize any immediate threats to the environment and the local population.

It should be noted that only soil and sediment samples have been collected at the site and, to date, a ground water investigation has not been conducted. However, based on existing information, the CDE site is a likely contributor to the regional ground water contamination documented in the area.

The Department views the presence of PCB contaminated soil to be a serious direct contact threat to the residents in the immediate area. Also, it appears past site activities are responsible for the regional ground water contamination documented in the area, however, additional ground water data needs to be collected at the site to confirm the link to the off site ground water impact.

As indicated in the above summary of activities, the EPA is already actively involved at the site. This document formally refers the site to EPA for removal action activities.

As such, the Department therefore requests that EPA sample, characterize and dispose of all hazardous substances found at the site in such a way as to safeguard the local population, and perform any necessary investigatory and remedial work at the site as deemed appropriate.

Should your staff require additional information please have them contact Janet M. Smolenski of the Bureau of Field Operations, Case Assignment Section at (609) 292-2943.

Sincerely,



Robert R. Van Fossen
Assistant Director
Discharge Response Element

c: Richard Salkie, Branch Chief, Removal Action Branch, EPA
Bruce Sprague, Branch Chief, Response and Prevention Branch, EPA
Al Kaczoroski, Bureau Chief, Bureau of Field Operations
Janet Smolenski, EPA Removal Action Coordinator, Bureau of Field
Operations - Case Assignment Section

APPENDIX C



WESTON
MANAGERS DESIGNERS/CONSULTANTS

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION

IN ASSOCIATION WITH RESOURCE APPLICATION, Inc.
J.C. JOHNSON & MALHOTRA, P.O., R.E. SARRIERA ASSOCIATES,
PRC ENVIRONMENTAL MANAGEMENT, AND GRB ENVIRONMENTAL SERVICES, INC.

EPA TM

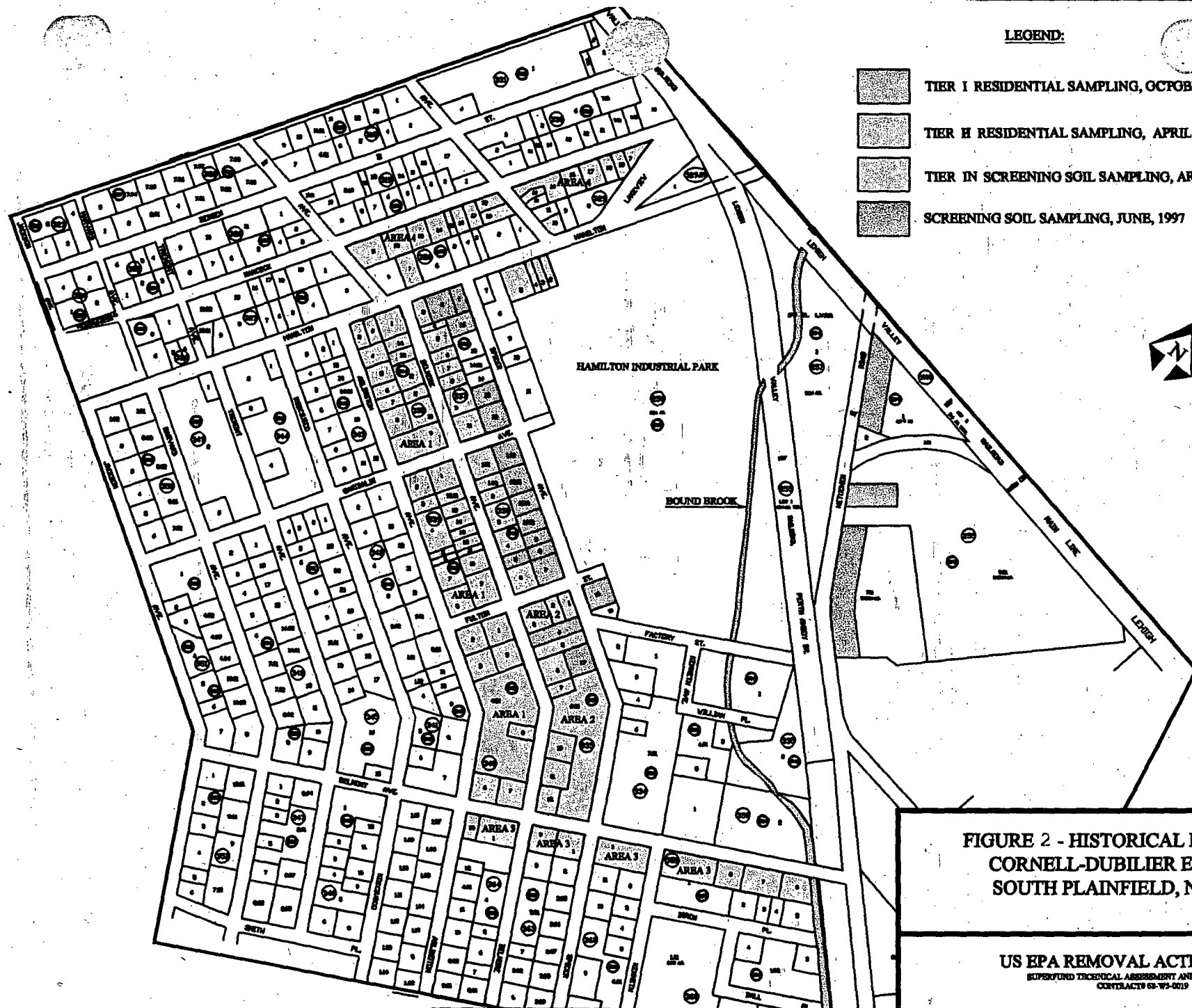
E. WILSON

CORNELL-DUBILIER
ELECTRONICS
S. PLAINFIELD, NJ

START PM

M. MAHNKOPF

FIGURE 1
SITE LOCATION
MAP



HEALTH CONSULTATION

CORNELL DUBILIER ELECTRONICS INCORPORATED

SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

CERCLIS NO. NJD981557879

Prepared by:

Exposure Investigation and Consultation Branch
Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry

Background and Statement of Issues

The Region II U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) evaluate analytical data from residential properties located across the street from the Comell-Dubilier Electronic Inc. site in South Plainfield, New Jersey, and determine if polychlorinated biphenyls (PCBs) in indoor dust and surface soils are at levels of public health concern [1]. Exposure Investigation and Consultation Branch (EICB) has completed several verbal health consultations regarding on-site PCB contamination and made public health recommendations that have included sampling of residential homes near the site [2,3].

The Comell-Dubilier Electronics Site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey. The 25 acre site is bordered by commercial businesses and residences on the south, west and north, and on the southeast, east, and northeast by an unnamed tributary to Bound Brook [2]. It is estimated that 540 persons reside within 0.25 miles of the site; the nearest residence is approximately 200 feet from the site [2].

During the 1950s, Comell-Dubilier Electronics, Inc. manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were landfilled onsite and transformer oils contaminated with PCBs were reportedly dumped directly onto site soils. The company vacated the site in the early 1960s [2].

The site is currently known as the Hamilton Industrial Park and is occupied by an estimated 15 commercial businesses. Numerous companies have operated at the site as tenants over the years [2]. A paved driveway is used to enter the park; the pavement ends within 100 yards of entering the park. It has been observed that vehicles entering the industrial park during dry conditions create airborne dust [2]. The driveway leads into what was formally a dirt, gravel, and stone roadway that nearly encircles the business structures at the site. The roadway separates the structures from a heavily vegetated vacant field, and was paved by EPA in September 1997 as part of the site stabilization process to mitigate migration of contaminated dust.

On March 24, 1998, ATSDR and EPA Region II held a conference call to discuss indoor dust and surface soil data collected from 16 residential properties and analyzed for PCBs.

The residential properties sampled by EPA were selected using information obtained from air modeling. The indoor dust and surface soil sampling was conducted to evaluate health impacts to area residents from PCB contamination.

In October 1997, EPA Region II collected surface soil samples from 16 residential properties [4]. The soils were analyzed for PCBs. Approximately 20 surface soil samples were collected from each residential property. PCB levels in surface soils ranged from none detected to 22 parts per million (ppm).

Site. The following compounds have been identified at elevated levels in the building interior dust at the Site.

Substances Identified

Statutory Source for Designation as a Hazardous Substance

Lead	RCRA §3001
Cadmium	CAA §112, CWA §307(a)
Chromium	CAA §112, CWA §307(a)
Mercury	CAA §112, RCRA §3001, CWA §307(a)

Each of these substances may exhibit one or more of the following physical or toxicological characteristics: acutely toxic, chronically toxic, poisonous and/or irritational. Health effects associated with human exposure to these chemicals include: membrane irritation, liver kidney damage, central nervous system damage, respiratory dysfunction and blood disorder.

The materials discussed above are designated as CERCLA hazardous substances under 40 CFR § 302.4.

The General Color Inc. Site is considered a facility as defined by Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9). A release of hazardous substances has occurred on the Site in a quantity and concentration that has resulted in a threat to the public health, or welfare, or the environment. The mechanism for past releases to the environment includes spills inside and outside of the buildings and deterioration of containers which have since been removed from the Site. There is a threat of further releases at the Site.

5. NPL status

At the present time, the Site is not on the NPL and there are no efforts underway to include this Site on the NPL.

6. Maps, pictures or other graphic representations

Please refer to Figures 1 and 2 for Site location and layout.

B. Other Actions to Date

1. Previous actions

The Site was verbally referred to EPA by the New Jersey Department of Environmental Protection (NJDEP) on January 13, 1998 and an ERA was conducted by EPA on March 11, 1998. Prior to the referral, NJDEP conducted a removal action on the exterior of the Site on January 9, 1998.

ENFORCEMENT SENSITIVE

Cornell-Dubilier Electronics Site
September 1998

Notice letters, an Administrative Order on Consent (AOC) and scope of work for the Remedial Investigation/Feasibility Study (RI/FS) have been sent to: Cornell-Dubilier Electronic, Inc.; DSC of Newark Enterprises, Inc.; Dana Corporation; Dana Corporation Foundation; and Federal Pacific Electric.

C. Decision Whether to Issue an Order

The decision was made not to issue an AOC for these actions for the following reasons:

- i. Past negotiations with these PRPs for a removal actions to address site contamination in on-site buildings have been unproductive;
- ii. Timely action was necessary to mitigate threats to public health; and
- iii. The cost of these actions were relatively inexpensive and did not justify the added cost of negotiating and overseeing an AOC.

D. Negotiations and Order Issuance

On March 25, 1997, a Unilateral Administrative Order issued to DSC of Newark that required that a removal action be performed to stabilize the Site and mitigate the threat of migration of contaminants off-site.

In August 1998, DSC and CDE entered into an AOC with EPA for a removal action to remove and dispose of contaminated soil from five properties sampled by EPA in October 1997.

A draft AOC and scope of work for an RI/FS have been sent to the identified PRPs.

State of NJDEP and Health have been notified of conditions at the Site and proposed actions to address human health and the environment.

ENFORCEMENT SENSITIVE

Cornell-Dubilier Electronics Site
September 1998

A. PRP Search

The title information provided below is an assimilation of the Chain of Title Research Documents prepared by TRC Environmental Corp. (EPA Contract #68-W4-0020, Work Assignment 008) and the Preliminary Assessment Report prepared for D.S.C. of Newark Enterprises, Inc.

Title search: (approximate)

1924 - March 1929	Spicer Manufacturing Corp.
March 1929 - August 1934	Plainfield Manufacturing Company
August 1934 - July 1946	Spicer Manufacturing Corp.
July 1946 - June 1956	Dana Corporation
June 1956 - July 1956	Dana Corporation Foundation
July 1956 - June 1961	Cornell-Dubilier Electronics
June 1961 - April 1976	Lamitex, Inc. and C.R.D. Realty Corp.
April 1976 - November 1976	Marco Investing Corp.
November 1976 - current	D.S.C. of Newark Enterprises

On September 10, 1996, Information Request Letters (IRLs) were sent to Cornell-Dubilier Electronics, Dana Corporation, DSC of Newark Enterprises and Federal Pacific Electric Company.

A draft PRP Search Report was completed for the Site in February 1998. PRPs identified include: Cornell-Dubilier Electronic, Inc., DSC of Newark Enterprises, Inc., Dana Corporation, Dana Corporation Foundation and Federal Pacific Electric. Potential PRPs identified include: Spicer Manufacturing, Corporation, Plainfield Manufacturing Company, Marco Investing Corporation; and past tenants and generators that operated at the industrial park.

On May 18, 1998, IRLs were issued to 31 companies including past and present tenants of Hamilton Industrial Park. Additional requests for information will be issued if and when additional former tenants are identified.

B. Notification of PRPs

On February 4, 1997, Notice letters were issued to Cornell-Dubilier Electronics and DSC of Newark Enterprises.

DETAILED COST ESTIMATE
Cornell-Dubilier Electronics Site

Confidential

Selected Alternative:

ATSDR has indicated that removal activities are required to remove PCBs from the interiors of eight homes. The cleaning procedures utilized for removal activities conducted in March 1998 will be employed. This includes: wiping down all horizontal exposed surfaces; vacuuming floors, drapes upholstery, molding and window casings using HEPA vacuums; washing all tile, linoleum and wood floors; steam cleaning carpets and area rugs; cleaning heating and cooling ducts and cleaning or replacing all filters on air handling equipment. In addition, carpets and area mgs that cannot be effectively cleaned will be removed and replaced. Mitigation contracting costs for cleaning conducted in April 1998 averaged \$20,000, per household. This cost will be used for bugeting purposes for the proposed action.

ERRS Costs:

8 homes X \$20,000/home	\$160,000
Mitigation Contractor Contingency (20%)	<u>32,000</u>

Mitigation Contractor Costs Increase	192,000
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START Costs:

200 hours x \$60/hour	<u>12,000</u>
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Subtotal Extramural Costs	204,000
Extramural Cost Contingency (20%)	<u>41,000</u>

EXTRAMURAL COST INCREASE	\$245,000
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Intramural Costs:

Intramural Direct Costs 200 hours x \$ 33/hour (rounded)	7,000
Intrmural Indirect Costs 200 hours x \$ 65/hour (rounded)	<u>13,000</u>

INTRAMURAL COST INCREASE	\$ 20,000
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PROJECT CEILING INCREASE	\$265,000
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ENFORCEMENT ADDENDUM

**CORNELL-DUBILIER ELECTRONICS SITE
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY**

References

- National Resource Council (1983) Risk Assessment in the Federal Government: Managing the process. National Academy of Sciences Press, Washington, D.C.
- U.S. EPA (1989) Risk Assessment Guidance for Superfund (RAGS): Volume I. Human Health Evaluation Manual (HHEM), Part A, Interim Final. Office of Emergency and Remedial Response, Washington, D.C. EPA/540/1-89/002.
- U.S. EPA (1991) Human health evaluation manual, supplemental guidance: "Standard Default Exposure Factors", Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.6-03
- U.S. EPA (1992) Supplemental Guidance to RAGS: Calculating the concentration term. Office of Solid Waste and Emergency Response, Washington, D.C. Publication # 9285.7-081.
- U.S. EPA (1994) Guidance manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children. U.S. EPA, Office of Emergency and Remedial Response, Washington, D.C. EPA/540/r-93/081.
- U.S. EPA (1995) Residential sampling for lead: protocols for dust and soil sampling. Final Report. U.S. EPA, Office of Pollution, Prevention and Toxics, Washington, D.C. EPA 747-R-95-001.
- U.S. EPA (1996) Soil Screening Guidance: technical Background Guidance: Office of Emergency and Remedial Response, Washington, D.C. EPA/540/R-96/128.
- U.S. EPA (1998) Integrated Risk Information System. Chemical specific file for PCBs. On-Line Database. U.S. EPA, National Center for Environmental Assessment, Washington, D.C.
- U.S. EPA (1998) Integrated Risk Information System. Chemical specific file for Aroclor 1254. On-Line Database. U.S. EPA, National Center for Environmental Assessment, Washington, D.C.

VI. Risk Characterization and Uncertainties

The cancer risks were exceeded $1.0E-04$ for properties C ($1.8E-04$) and E ($7.5E-04$). The non-cancer Hazard Index was exceeded for Properties, B (8.2), C (41), D (24), E (170), F (2.2), G (7.5), I (4.8), J (1.7), N (3.6), and O (2.3).

The non-cancer hazards at Properties A (1.3), K (1.4), M (1.3), and P (1.2) slightly exceed the Hazard Index of 1 but is not significantly different from an HI of 1.

In evaluating the data it is important to note the following limitations of the data and risk assessment.

- The risk assessment is a screening level assessment based on limited dataset. For example, change in concentrations over various seasons could not be evaluated.
- The data is limited to a single sampling event for each area and there is a potential for variability of the concentrations over time. The concentrations used for the interior areas were maximum concentrations for total PCBs including Aroclor 1254 and Aroclor 1260. For the exterior areas the concentrations used were the 95% Upper Confidence Limits. In those cases where the maximum concentration was exceeded in the calculation of the 95% Upper Confidence Limit the maximum concentration was used. Depending on the source these concentrations may vary over the assumed exposure duration of 30 years and the calculated risks and hazards may potentially be overestimated.
- The number of interior samples is limited and may result in a potential overestimate of risk since the default values in the absence of an adequate number of samples is the maximum concentration.
- The sampling report indicates a low sample mass which may potentially overestimate the risks associated with the interior areas since these may be more concentrated samples and not representative.
- The assessment includes a number of assumptions concerning the transfer of soil from the exterior to the interior of the homes. These assumptions are based on best professional judgement and may either over or underestimate the risks.

Property P.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	Not Sampled			
	1260				
	Combined				
Exterior	1254	0.13			1.2
	1260	0.080			0.34
	Combined	0.24	0.69	0.85	1.5

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior Ingestion Dermal/Inhalation	Not Sampled			
Exterior Ingestion Dermal/Inhalation	7.9E-07 7.9E-07	1.8E-06 1.8E-06	0.06 0.06	0.54 0.54
Total	1.6E-06	3.6E-06	0.12	1.08
Total Cancer Child & Adult	5.2E-06		1.2	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.49			2.5
	1260	0.095 (U)			0.54 (U)
	Combined	0.69	1.3		2.6
Exterior	1254	0.080			0.87
	1260	0.030 (U)			0.48
	Combined	0.15	0.38	0.54	1.3

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	1.3E-06	3.0E-06	0.09	0.88
Dermal/Inhalation	1.3E-06	3.0E-06	0.09	0.88
Exterior				
Ingestion	2.2E-07	5.1E-07	0.02	0.15
Dermal/Inhalation	2.2E-07	5.1E-07	0.02	0.15
Total	3.0E-06	7.0E-06	0.22	2.06
Total Cancer Child & Adult	1.0E-05		2.3	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	Not Sampled			
	1260				
	Combined				
Exterior	1254	0.30 (U)			6.8
	1260	0.030 (U)			1.9
	Combined	0.60	1.9	2.5	7.1

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior Ingestion Dermal/Inhalation	Not Sampled			
Exterior Ingestion Dermal/Inhalation	2.4E-06 2.4E-06	5.5E-06 5.5E-06	0.17 0.17	1.61 1.61
Total	4.8E-06	1.1E-05	0.34	3.22
Total Cancer Child & Aduh	1.58-05		3.6	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.13 (U)			0.25 (U)
	1260	0.13 (U)			0.25 (U)
	Combined	0.26 (U)	0.27		0.50 (U)
Exterior	1254	0.10			4.0
	1260	0.080			0.64
	Combined	0.18	1.1	1.4	4.3

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	2.6E-07	6.0E-07	0.019	0.18
Dermal/Inhalation	2.6E-07	6.0E-07	0.019	0.18
Exterior				
Ingestion	6.1E-07	1.4E-06	0.044	0.41
Dermal/Inhalation	6.1E-07	1.4E-06	0.044	0.41
Total	1.7E-06	4.0E-06	0.13	1.2
Total Cancer Child & Adult	5.7E-06		1.3	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.080 (U)			0.33
	1260	0.042 (U)			0.15 (U)
	Combined	0.16 (U)	0.17		0.37
Exterior	1254	0.19			1.0
	1260	0.090			0.33
	Combined	0.28	0.80	1.02	1.3

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	2.0E-07	4.5E-07	0.01	0.13
Dermal/Inhalation	2.0E-07	4.5E-07	0.01	0.13
Exterior				
Ingestion	4.5E-07	1.0E-06	0.03	0.3
Dermal/Inhalation	4.5E-07	1.0E-06	0.03	0.3
Total	1.3E-06	3.0E-06	0.05	0.86
Total Cancer Child & Adult	4.2E-06		0.90	

Property K.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	Not Sampled			
	1260				
	Combined				
Exterior	1254	0.050 (U)			1.4
	1260	0.030 (U)			0.44
	Combined	0.10	0.64	0.95	1.7

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior Ingestion Dermal/Inhalation				
Exterior Ingestion Dermal/Inhalation	8.9E-07 8.9E-07	2.1E-06 2.1E-06	0.065 0.065	0.61 0.61
Total	1.8E-6	4.2E-06	0.13	1.22
Total Cancer Child & Adult	6.0E-06		1.4	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.38			1.1
	1260	0.012 (U)			0.040 (U)
	Combined	0.38	0.62		1.1
Exterior	1254	0.030 (U)			3.6
	1260	0.030 (U)			0.93
	Combined	0.060 (U)	0.77	1.7	4.5

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	5.8E-07	1.3E-06	0.04	0.39
Dermal/Inhalation	5.8E-07	1.3E-06	0.04	0.39
Exterior				
Ingestion	4.9E-07	1.15E-06	0.04	0.34
Dermal/Inhalation	4.9E-07	1.15E-06	0.04	0.34
Total	2.14E-06	7.2E-06	0.16	1.5
Total Cancer Child & Adult	5.8E-06		1.7	

Property I.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.52			0.96
	1260	0.014 (U)			0.036 (U)
	Combined	0.53			1.0
Exterior	1254	0.025 (U)			15
	1260	0.025 (U)			2.5 (U)
	Combined	0.050 (U)	1.7	6.3	18

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	5.2E-07	1.20E-06	0.04	0.35
Dermal/Inhalation	5.2E-07	1.20E-06	0.04	0.35
Exterior				
Ingestion	2.7E-06	6.2E-06	0.19	1.81
Dermal/Inhalation	2.7E-06	6.2E-06	0.19	1.81
Total	6.4E-06	1.5E-05	0.46	4.32
Total Cancer Child & Adult	2.1E-05		4.8	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	Not Sampled			
	1260	Not Sampled			
	Combined				
Exterior	1254	0.089			1.0
	1260	0.094			0.55
	Combined	0.18	0.58	0.77	1.29

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior Ingestion Dermal/Inhalation	Not Sampled		Not Sampled	
Exterior Ingestion Dermal/Inhalation	7.3E-07 7.3E-07	1.71E-06 1.71E-06	0.05 0.05	0.25 0.25
Total	1.46E-06	3.4E-06	0.10	0.50
Total Cancer Child & Adult	4.8E-06		0.60	

Property G.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	1.3			7.9
	1260	0.65 (U)			1.05 (U)
	Combined	2.4	3.6		8.6
Exterior	1254	0.17			1.6
	1260	0.03 (U)			0.48
	Combined	0.2	1.1	1.3	2.1

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	4.4E-06	1.03-05	0.32	3.01
Dermal/Inhalation	4.4E-06	1.03-05	0.32	3.01
Exterior				
Ingestion	5.6E-07	1.31-06	0.04	0.40
Dermal/Inhalation	5.6E-07	1.31-06	0.04	0.40
Total	1.0E-05	2.4E-05	0.72	6.80
Total Cancer Child & Adult	3.2 E-05		7.5	

Property F.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.15			0.55 (U)
	1260	0.033 (U)			0.55 (U)
	Combined	0.18 (U)	0.58		1.1 (U)
Exterior	1254	0.30 (U)			5.6
	1260	0.030 (U)			1.3
	Combined	0.60 (U)	1.6	2.1	6.9

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	5.7E-07	1.3E-06	0.04	0.39
Dermal/Inhalation	5.7E-07	1.3E-06	0.04	0.39
Exterior				
Ingestion	8.7E-07	2.0E-06	0.06	0.60
Dermal/Inhalation	8.7E-07	2.0E-06	0.06	0.60
Total	2.8E-06	9.6E-06	0.20	2.00
Total Cancer Child & Adult	1.3E-05		2.2	

Property E.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	17			120
	1260	8.1			85
	Combined	25	79		200
Exterior	1254	2.4			22
	1260	0.30(U)			1.6 (U)
	Combined	2.7	11	15	24

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	1.1E-04	2.5E-04	7.72	72.1
Dermal/Inhalation	1.1E-04	2.5E-04	7.72	72.1
Exterior				
Ingestion	6.2E-06	1.4E-05	0.45	4.2
Dermal/Inhalation	6.2E-06	1.4E-05	0.45	4.2
Total	2.24-04	5.2E-04	16.34	152.5
Total Cancer Child & Adult	7.5E-04		170	

Property D.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	2.5			30
	1260	0.015 (U)			3.5
	Combined	2.5	17		30
Exterior	1254	0.090			2.8
	1260	0.11			2.2
	Combined	0.23	1.0	1.6	3.4

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	1.6E-05	3.6E-05	1.13	10.57
Dermal/Inhalation	1.6E-05	3.6E-05	1.13	10.57
Exterior				
Ingestion	6.9E-07	1.6E-06	0.05	0.47
Dermal/Inhalation	6.9E-07	1.6E-06	0.05	0.47
Total	3.2E-05	3.8E-05	2.4	22.08
Total Cancer Child & Adult	7.0E-05		24	

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	15			38
	1260	4.0			9.2
	Combined	24	38		47
Exterior	1254	0.030 (U)			21
	1260	0.030 (U)			1.2
	Combined	0.060 (U)	2.7	6.5	21

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	2.4 E-05	5.7E-05	1.77	16.60
Dermal/Inhalation	2.4 E-05	5.7E-05	1.77	16.60
Exterior				
Ingestion	2.8 E-06	6.5E-05	0.20	1.88
Dermal/Inhalation	2.8 E-06	6.5E-05	0.20	1.88
Total	5.4E-05	1.3E-04	3.94	36.96
Total Cancer Child & Adult	1.8E-04		41	

Property B.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.42			5.2
	1260	0.055 (U)			0.12 (U)
	Combined	0.50			5.3
Exterior	1254	0.062			8.7
	1260	0.030 (U)			1.8
	Combined	0.092	2.7	6.4	11

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	2.7E-06	6.3E-06	0.20	1.85
Dermal/Inhalation	2.7E-06	6.3E-06	0.20	1.85
Exterior				
Ingestion	2.7E-06	6.3E-06	0.20	1.84
Dermal/Inhalation	2.7E-06	6.3E-06	0.20	1.84
Total	5.4E-06	1.26E-05	0.80	7.38
Total Cancer Child & Adult	1.8E-05		8.2	

Property A.

Summary of Data.

Location	Aroclor	Minimum (mg/kg)	Mean (mg/kg)	95% UCL (mg/kg)	Maximum (mg/kg)
Interior	1254	0.12			0.41
	1260	0.013 (U)			0.25 (U)
	Combined	0.17	0.37		0.50
Exterior	1254	0.030 (U)			2.4
	1260	0.030 (U)			0.860
	Combined	0.060 (U)	0.78	1.4	3.3

Summary of Cancer and Non-Cancer Risks

	Cancer		Non-Cancer	
Location	Adult	Child	Adult	Child
Interior				
Ingestion	2.6E-07	6.0 E-07	0.02	0.18
Dermal/Inhalation	2.6E-07	6.0 E-07	0.02	0.18
Exterior				
Ingestion	6.0E-07	1.4 E-06	0.04	0.40
Dermal/Inhalation	6.0E-07	1.4 E-06	0.04	0.40
Total	1.7E-06	4.0 E-06	0.12	1.16
Total Cancer Child & Adult	5.7E-6		1.3	

V. Risk Calculations

The following sections provide a summary of the concentrations of Aroclor 1254 and Aroclor 1260 found in the interior and exterior of each residence. The concentrations for the exterior are based on a 95% Upper Confidence Limit of the total PCBs where adequate numbers of samples were available and the 95% UCL did not exceed the maximum concentration (U.S. EPA, 1992). Where the 95% UCL exceeded the maximum concentration the maximum concentration was used in the calculation (U.S. EPA, 1992).

The number of interior samples varied from 3 to 8 based on Aroclor specific values with only 3 or 4 samples based on the Total PCBs. This total number of samples did not provide an adequate number of values to calculate a 95% Upper Confidence Limit (U.S. EPA, 1991). The maximum values were used in the calculation of risk and hazard.

The following sections summarize the range of values found in the interior and exterior for each property. A calculated cancer and non-cancer risk is also provided for each property.

III. Exposure Assessment

The potential exposure to the dust and soil were evaluated as described in RAGS-Part A (U.S. EPA, 1989). Exposures were evaluated using EPA's default exposure assumptions (U.S. EPA, 1991).

Essentially, exposures were assumed for a 70 kg (154 lbs) adult for 24 years based on 350 days/year and for a 15 kg (33 lbs) child for 350 days/year for 6 years. The total risks and hazards were based on combining risks and hazards from the child and adult. Children were assumed to ingest 200 mg of soil and dust/day while adults were assumed to ingest 100 mg of soil and dust/day.

The assumptions are for the Reasonably Maximally Exposed Individual (child and adult) receiving their entire soil exposure per day from this source. It is also assumed that the individual will be exposed only to PCBs. This may potentially over-estimate risks since there is a potential for people to be exposed to other sources when they are away from the home. This assumption also assumes a constant source of exposure from the yard for the next 30 years which may also potentially over-estimate risks since remediation would reduce these risks and hazards.

To apportion the interior and exterior exposures the recommendations from the IEUBK model for lead were used (U.S. EPA, 1995). The IEUBK methodology recommends using an assumption of 55% exposure from the interior source and 45% as the exterior source.

Other potential routes of exposure include inhalation of dust particulates and dermal contact with the dust. Based on the short turn around time to develop this screening level assessment, modeling of dust particulate and dermal contact were not attempted. However, since > 10% of PCBs may be absorbed through dermal exposure the Soil Screening Level guidance recommendation of assuming 50% from ingestion and 50% from dermal and inhalation was applied. This may potentially over-estimate the risks based on the small sample mass for the interior dust and the extrapolation of the interior and exterior data over a period of 30 years. As a check on the assumptions, the Preliminary Remediation Goal of 1 ppm that includes both ingestion and dermal contact equates to a Hazard Index of 1 and a cancer risk of approximately 5×10^{-6} . These values are similar to the values calculated using the doubling approach as shown in the attached Tables.

IV. Toxicity Assessment

A cancer slope factor of 2 mg/kg-day was used based on the recommendations of the "PCBs: Cancer-Dose Response Assessment and Application to Environmental Mixtures" (U.S. EPA, 1996 and U.S. EPA, 1998). For the non-cancer analysis the Reference Dose for Aroclor 1254 was used in the analysis based on the similarities of Aroclors 1254 and 1260 to Aroclor 1254. Based on studies in animals, PCBs are classified as a probable human carcinogen and non-cancer health effects associated Aroclor 1254 exposure include reduced birth weight and effects on the immune system.

Risk Assessment for Soils and Dust
From Areas Surrounding the Comell-Dublier Site

I. Introduction

The goal of this screening level risk assessment is to assess the potential risks and hazards associated with ingestion of interior dust and exterior soils in South Plainfield, New Jersey. Soil samples from 16 residences and interior samples from 12 interiors were collected from homes surrounding the Comell Dubher site. The assessment was conducted using standard risk assessment procedures (U.S. EPA, 1989; U.S. EPA, 1991; and U.S. EPA, 1998). The analysis is organized according to the risk assessment paradigm (NRC, 1983).

II. Data Evaluation

The interior dust samples were collected on November 17 and 18, 1997 by EPA's contractor to determine the potential extent of contamination of polychlorinated biphenyls (PCBs) in residences located southwest of the Hamilton Industrial Park in South Plainfield, New Jersey. A total of 12 residences were sampled since 4 residences did not agree to interior sampling. The sampling was conducted by the Response Engineering Analytical Contract and reported in the February 1998 document "Final Report Vacuum Dust Sampling Comell-Dublier Electronics, South Plainfield, New Jersey". Samples were collected using High Efficiency Particulate Air (HEPA) vacuums. Originally, the sample areas were planned to be 1 meter squared but due to the low sample mass the sampling area was increased.

Soil samples were collected from 16 residences. All samples are grabs, collected 0-2" below ground surface over an area of approximately 6" x 6" from October 27, 1997 to October 30, 1997. EPA's Removal Assessment personnel indicated that many yards had lawns and grass cover that may aid in reducing potential exposures.

The exterior and interior soil samples were QA/QCed following EPA Region II's methods. Thirty-seven dust samples were collected for PCB analysis. Twenty-nine samples showed levels of weathered Aroclor 1254 above the method detection limit. The weathering designations indicate that the Aroclor in question is present, but due to breakdown, most predominant peaks are present with some changed peak ratios. Sample levels ranged from 120 ug/kg to 120,000 ug/kg. Ten samples had levels of weathered Aroclor 1260 above the Method Detection Limit (MDL) ranging from 54 ug/kg to 85,000 ug/kg. Aroclors 1016, 1221, 1232, 1242 and 1248 were not found above the MDL. No Aroclors were reported detected in the System Blatik.

Since Aroclors 1016, 1221, 1232, 1242, and 1248 were not detected in any samples they were not evaluated in the assessment as described in the Risk Assessment Guidance for Superfund - Part A (U.S. EPA, 1989). The concentrations for the individual Aroclors 1254 and 1260 were added together based on discussions with the On Scene Coordinator and the OSC's discussion with the chemist. The risks presented are for Total PCBs based on the addition of the concentrations for Aroclor 1254 and Aroclor 1260.

Human Health Risk Assessment
Residential Soils Surrounding the Comell-Dublier Site

South Plainfield, New Jersey

June 2, 1998

Prepared by:
Program Support Branch
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APPENDIX E

References

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4. Comell-Dubilier Electronics Sampling Trip Report (Surface Soil Sampling). DCN#: START-02-F-01454. TDD#: 02-97-02-0015. PCS#: 2076. Sampling Date: October 27,28,29 and 30, 1997.
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6. Toxicological Profile for Polychlorinated Biphenyls (PCBs) Update. U.S. Department of Health and Human Services. Agency for Toxic Substances and Disease Registry. September 1997.
7. PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures. National Center for Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency. EPA/600/P-96/001F. September 1996.

3. Different cleaning methods should be used in the homes where elevated levels of PCBs were detected in indoor dust by wet/damp dusting and mopping on floors and hard surfaces with a cleaning solution such as Lestoil or Mr.Clean. These products are mineral-oil-based cleaners that help to clean up the PCBs. Carpets should also be shampooed with these products. Prior to cleaning of the home interior surfaces by EPA, the use of a regular vacuum cleaner to remove dust is NOT recommended unless a HEPA (high efficiency particulate adsorption) filter is placed on the vacuum cleaner exhaust.
4. As needed, additional dust suppression techniques should be used at the site to prevent off-site migration of contaminated dust.
5. Conduct indoor dust sampling at residential properties where only surface soil sampling was conducted.
6. Determine if other residences in the area are contaminated (include soil samples from properties located upwind of the facility).

If further clarification is required or when additional information becomes available, please contact this office at 404/639-0616.

Tammie McRae Date: 5-17-98
Tammie McRae, M.S.

Concurrence: [Signature] Date: 5/20/98

13. H	Potential health concern (c)	sample indoor dust health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils
14. K.	Potential health concern (c)	sample indoor dust health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils
15. N	Potential health concern (c)	sample indoor dust health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils
16. P	Potential health concern (c)	sample indoor dust health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils
<p>(a) <u>Health concern</u> - take action to reduce/stop exposures to PCBs</p> <p>* <u>Potential health concern</u>- data needed, prudent to take action at this time to reduce exposures:</p> <p>(h) resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil) contamination may be tracked into homes)</p> <p>(c) indoor dust sampling should be conducted to better assess the health concern at these residential properties</p> <p>(d) surface soils are elevated and may pose a future health concern for indoor dust contamination</p> <p>(e) <u>No health concern</u>- no action needed at this time</p>		

2. The nature and extent of off-site migration of PCB contaminated dust via wind has not been determined.
3. The nature and extent of surface soil PCB contamination in this residential community has not been determined.

Recommendations

1. Prevent potential exposure to PCBs in surface soil at levels of public health concern. ATSDR believes that an interim measure or permanent solution to the contaminated residential yards and/or indoor dust should be put in place within six months.
2. As additional data becomes available on the extent and degree of off-site contamination, provide health education to residents on ways to reduce their potential exposure to polychlorinated biphenyls (PCBs) present in indoor dust and surface soils. ATSDR will assist in the health education at this site through the Division of Health Assessment and Consultation's Community Involvement Branch.

6. J	Potential health concern (b)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p>
7. B	Potential health concern (b)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p>
8. A	Potential health concern (b)	<p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated</p> <p>surface soils at this property did not represent a health concern; however, PCBs were detected in the indoor dust.</p>
9. I	Potential health concern (b)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p>
10. M	Potential health concern (d)	<p>reduce/stop potential exposure to surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>indoor dust not a health concern; however, surface soil contamination may contribute to future indoor dust contamination</p>
11. F	Potential health concern (d)	<p>reduce/stop potential exposure to surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>indoor dust not a health concern; however, surface soil contamination may contribute to future indoor dust contamination</p>
12. L	No health concern (e)	no action at this time

1. Elevated levels of PCBs were detected in indoor dust and the surface soils at residential properties that may pose a health concern or potential health concern to the residents. The health evaluations for the residential properties are presented in the following table:

Table 1: Health Categories for Residential Properties:

Residential Property Designations	Health Categories	Follow up activities needed for residents with elevated levels of PCBs in indoor dust and/or surface soils
1. E	Health concern (a)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p>
2. D	Health concern (a)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p>
3. C	Health concern (a)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p>
4. G	*Potential health concern (b)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p>
5. O	Potential health concern (b)	<p>reduce/stop potential exposure to indoor dust and surface soils contaminated with PCBs</p> <p>health education on ways to reduce/stop potential exposure to indoor dust and/or surface soils</p> <p>resample indoor dust to ensure that future indoor dust levels are not elevated (surface soil contamination may be tracked into homes)</p>

In November 1997, EPA Region II collected indoor dust samples from 12 residential properties [5]. The indoor dust samples were analyzed for PCBs. Approximately two to four indoor dust samples were collected from each residential property. PCB levels in indoor dust ranged from none detected to 205 ppm (or 117 micrograms (ug) total PCBs in sample mass).

Discussion

Because the properties sampled were residential, it is anticipated that populations potentially exposed to contamination will include children and adults.

PCBs can be absorbed into the body via ingestion, inhalation, or dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. In humans, long-term exposure to PCBs can affect the skin and liver; reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [6]. PCBs have very low potential for producing acute toxic effects [6].

An immunosuppressant effect was observed in a study of monkeys chronically exposed to 0.005 mg/kg/day of PCBs. On the basis of this study of monkeys, ATSDR has derived a chronic oral Minimal Risk Level (MRL) for PCBs of $2.0E-05$ mg/kg/day. An MRL is defined as an estimate of daily human exposure to a dose of a chemical that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure [6]. Screening level exposure-dose calculations indicate that children in some houses may exceed the MRL.

Since screening analysis identified potential for health concern, soil and dust PCB concentrations were evaluated using averaged daily doses estimated for both child and adult residential exposure scenarios and both cancer and non-cancer dose response relationships for PCBs. The exposure dose equation and parameter assumptions used for soil assessment followed that found in EPA RAGS. Exposure equations used for indoor dust assessment were based on ongoing methods development by a combined ATSDR/EPA/CDC workgroup on residential dust pathway analysis. Evaluations of health concerns were made on a house-by-house basis using estimated excess individual cancer risk, a margin of exposure analysis relative to the identified LOAEL for immunosuppression, and qualitative consideration of uncertainty based on site specific data.

Conclusions

Based on the indoor dust and surface soil analytical data for the residential properties located across the street from the Cornell-Dubilier site, the one point and time sampling event for both indoor dust and surface soils, the unknown location of an elevated level of PCBs on a specific residential property (e.g., the one 22 ppm elevated PCB level may be located next to a child's play area or near the entryway into the home), and the uncertainty of the future indoor dust levels (how the indoor dust levels would be impacted by surface soil contamination is uncertain), ATSDR concludes the following: